

# REPORT DOCUMENTATION PAGE

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MEMORANDUM FOR PER (Contractor Publication)

NQ

7 July 1998

FROM: PROI (TI) (STINFO)

SUBJECT: Authorization for Release of Technical Information, Control Number: AFRL-PR-ED-TP-1998-134  
(Atlantic Research Corp) "Attachment 1: Additions to the Industry Paper for the 1998 JPC"

**AIAA**

**(Statement A)**

**DISTRIBUTION STATEMENT A**  
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**ATTACHMENT 1**

**Additions to the Industry Paper for the 1998 JPC**

*by year*

Atlantic Research Corporation (ARC) was awarded a IHRPT contract by the Air Force Research Laboratory (AFRL), Edwards AFB, for a 4.5 kW High Performance Hall System developed by International Space Technology, Inc (ISTI) and based on the Fakel SPT-140 and the Space Systems/Loral (SS/L) power processor technology. This contract builds upon the successful ISTI SPT-140 development program started in early 1996 and will demonstrate a complete propulsion system by 2000. In this IHRPT program the team of ARC, ISTI, Fakel, SS/L and RIAME have conducted the thruster PDR, built the development model thruster and initiated acceptance testing of the thruster. In addition, SS/L has initiated development of the PPU for the SPT-140.

*these thrusters are*

Production of the Fakel built SPT-100 continued with delivery of a total of 22 thrusters to ISTI in the United States, earmarked for the French Stentor program, various SS/L satellites and for risk reduction purposes. The Russian satellite Koupon was launched in November with an additional 8 SPT-100 bringing the total number of operational SPT-100 on orbit to 40. Work is continuing on SPT-100 hardware for the Yamal-200 and SEASAT programs.

*too many of's*

More testing has been done on the SPT-100, further demonstrating the robustness of the design. ISTI funded additional life testing on SPT-100 SN3, the unit which had completed 6,100 hours of life testing at JPL and subsequent plume testing at NASA LeRC in one of Fakel's cryogenic test facilities. This test extended total operation on this thruster over 7,500 hours with 6,700 hours and 6,000 cycles on a single KN-3B cathode. That makes this the second SPT-100 to exceed 7,400 hours still operating completely within specification. Other SPT-100 tests included demonstration of steady state operation at input powers beyond 3,400 watts, joint operation of 2 SPTs from a single cathode and operation of the KN-3B cathode at powers up to 20 amperes.

*no common necessary*

In addition, ARC delivered a laboratory model SPT-30 built by RIAME MAI to NASA LeRC for testing.